

Claims

1. For use in a cellular telecommunications network including a plurality of individually addressable Base Transceiver Stations (BTSs) providing bidirectional signal coverage over a predefined geographical area, capable of transmitting Point-To-MultiPoint (PTMP) messages over a Point-To-MultiPoint Service (PTMPS) functionality and capable of transmitting Point-To-Point (PTP) messages, a method for operating the cellular telecommunications network comprising the step of transmitting a cellular broadcasting service consisting of a substantially continuous stream of mostly different content, at least some interactive display messages for streaming display on at least one enabled personal cellular telecommunications devices where each interactive display message enables a subscriber to automatically activate a point-to-point transmission response mechanism integrally provided in a display message and actuatable by a dedicated response means associated therewith.
2. The method according to claim 1 wherein the step of transmitting streams display messages at the rate of between one display message about every 5 seconds to one display message about every 5 minutes.
3. The method according to claim 2 wherein the step of transmitting streams display messages at the rate of between one display message about every 5 seconds to one display message about every 2 minutes.
4. The method according to any one of claims 1 to 3 wherein the step of transmitting includes transmitting a staggered sequence of display messages advertising an item in progressively smaller geographical areas centered around a predefined location.

- 11 -

5. The method according to claim 4 wherein the staggered sequence of display messages advertise progressively lower purchase prices for the item in accordance with a pricing scheme.

5 6. The method according to any one of claims 1 to 5 wherein a display message enables a subscriber to automatically activate one of at least two point-to-point transmission response mechanisms from the list of: a voice call; an SMS; a data session; e-mail; and a facsimile transmission where each response mechanism is integrally provided in a display message and actuable by a
10 dedicated response means associated therewith.

7. The method according to claim 6 wherein the at least two response mechanisms are displayed on a personal cellular telecommunications device in response to subscriber activation of a dedicated response means integrally
15 provided in a display message.

8. The method according to any one of claims 1 to 7 wherein the step of transmitting includes simultaneously transmitting at least two streams of different content display messages, and further comprising the step of providing a
20 programming channel allocation scheme for determining the stream of display messages to be transmitted at each BTS.

9. The method according to any one of claims 1 to 8 wherein the cellular broadcasting service consists of a substantially continuous stream of PTMP
25 display messages for streaming display on a particular personal cellular telecommunications device.

10. The method according to any one of claims 1 to 8 wherein the cellular broadcasting service consists of a substantially continuous stream of PTP display

- 12 -

messages for streaming display on a plurality of personal cellular telecommunications devices.

11. A cellular telecommunications network operative in accordance with any
5 one of claims 1 to 10.

12. The cellular telecommunications network according to claim 11 wherein
the cellular telecommunications network is a GSM network and the display
messages are of the SMS Class 2 type.

10

13. A computer program loadable into a cellular telecommunications network
so that the cellular telecommunications network programmed in this way is
capable of or adapted to carrying out a method in accordance with any one of
claims 1 to 10.

15

14. A program storage device readable by a cellular telecommunications
network tangibly embodying a program of instructions executable by the cellular
telecommunications network for carrying out a method in accordance with any
one of claims 1 to 10.

20

15. For use in a cellular telecommunications network including a plurality of
individually addressable Base Transceiver Stations (BTSs) providing
bidirectional signal coverage over a predefined geographical area, and capable of
transmitting mostly different content, at least some interactive display messages
25 where each interactive display message enables a subscriber to automatically
activate a point-to-point transmission response mechanism integrally provided in
a display message by a dedicated response means associated therewith, a method
for operating a personal cellular telecommunications device having at least one
dynamic storage buffer, and a subscriber interface including a display screen, the
30 method comprising the steps of:

- 13 -

- (a) temporarily storing display messages in a dynamic storage buffer ready for display on the display screen;
- (b) instead of displaying an idle screen on the display screen, automatically streaming display messages from the dynamic storage buffer on the display screen but interrupting their display to display a non-idle activity specific screen, if invoked; and
- (c) automatically discarding display messages from the dynamic storage buffer in accordance with a display message discard scheme irrespective of their having been displayed on the display screen or not.

10

16. The method according to claim 15 wherein the display message discard scheme automatically discards undisplayed display messages from the dynamic storage buffer on a First In First Out basis.

15

17. The method according to either claim 15 or 16 wherein the display message discard scheme automatically discards a display message immediately prior to its display if it is incomplete.

20

18. The method according to any one of claims 15 to 17 wherein the display message discard scheme automatically discards an out-of-date display message prior to its display if it satisfies the condition that $T_{\text{CLOCK}} - T_{\text{RECEIVE}} < T_{\text{DISCARD}}$ where T_{CLOCK} is the clock time of the personal cellular telecommunications device, T_{RECEIVE} is the time of receipt of the display message at the personal cellular telecommunications device, and T_{DISCARD} is a predetermined time interval.

25

19. The method according to any one of claims 15 to 18 wherein the display message discard scheme automatically discards displayed display messages from the dynamic storage buffer.

30

- 14 -

20. The method according to any one of claims 15 to 19 wherein a PTP display message ready for display is displayed on the display screen in preference to a PTMP display message ready for display.

5 21. The method according to any one of claims 15 to 20 wherein the entire handling of a display message from its receipt through to its being automatically discarded is a completely silent process irrespective of whether the display message was displayed on the display screen or not.

10 22. The method according to any one of claims 15 to 21 wherein a display message enables a subscriber to automatically activate one of at least two point-to-point transmission response mechanisms from the list of: a voice call; an SMS; a data session; e-mail; and a facsimile transmission, each response mechanism integrally provided in a display message and actuable by a dedicated response
15 means associated therewith.

23. The method according to claim 22 wherein the at least two point-to-point transmission response mechanisms are displayed in response to subscriber activation of a dedicated response means integrally provided in a display
20 message.

24. A computer program loadable into a personal cellular telecommunications device so that the personal cellular telecommunications device programmed in this way is capable of or adapted to carrying out a method in accordance with any
25 one of claims 15 to 23.

25. A program storage device readable by a personable cellular telecommunications device tangibly embodying a program of instructions executable by the personal cellular telecommunications device for carrying out a
30 method in accordance with any one of claims 15 to 23.

26. A smart card operable with a personal cellular telecommunications device so that the personal cellular telecommunications device is capable of or adapted to carrying out a method in accordance with any one of claims 15 to 23.

5

27. For use in a cellular telecommunications network including a plurality of individually addressable Base Transceiver Stations (BTSs) providing bidirectional signal coverage over a predefined geographical area, and each capable of transmitting mostly different content, at least some interactive display messages where each interactive display message enables a subscriber to automatically activate a response mechanism integrally provided in a display message and actuable by a dedicated response means associated therewith, a method for operating a personal cellular telecommunications device having at least one dynamic storage buffer, and a subscriber interface including a split screen display screen including a first portion and a second portion, the method comprising the steps of:

10

(a) temporarily storing display messages in a dynamic storage buffer ready for display on the second portion of the display screen;

(b) normally displaying an idle screen on the first portion of the display screen; and automatically streaming display messages from the dynamic storage buffer on the second portion of the display screen;

15

(c) provisioning on the subscriber interface a dedicated response means selectively actuable by the subscriber for actuating a response mechanism integrally formed with a display message;

(d) displaying a non-idle activity specific screen on at least the first portion of the display screen, if invoked; and

20

(e) automatically discarding display messages from the dynamic storage buffer in accordance with a display message discard scheme irrespective of their having been displayed on the display screen or not.

25

30

- 16 -

28. The method according to claim 27 wherein the display message discard scheme automatically discards undisplayed display messages from the dynamic storage buffer on a First In First Out basis.

5 29. The method according to either claim 27 or 28 wherein the display message discard scheme automatically discards a display message immediately prior to its display if it is incomplete.

10 30. The method according to any one of claims 27 to 29 wherein the display message discard scheme automatically discards an out-of-date display message prior to its display if it satisfies the condition that $T_{\text{CLOCK}} - T_{\text{RECEIVE}} < T_{\text{DISCARD}}$ where T_{CLOCK} is the clock time of the personal cellular telecommunications device, T_{RECEIVE} is the time of receipt of the display message at the personal cellular telecommunications device, and T_{DISCARD} is a predetermined time interval.

15 31. The method according to any one of claims 27 to 30 wherein the display message discard scheme automatically discards displayed display messages from the dynamic storage buffer.

20

32. The method according to any one of claims 27 to 31 wherein a PTP display message ready for display is displayed on the display screen in preference to a PTMP display message ready for display.

25 33. The method according to any one of claims 27 to 32 wherein the entire handling of a display message from its receipt through to its being automatically discarded is a completely silent process irrespective of whether the display message was displayed on the display screen or not.

- 17 -

34. The method according to any one of claims 27 to 33 wherein a display message enables a subscriber to automatically activate one of at least two point-to-point transmission response mechanisms from the list of: a voice call; an SMS; a data session; e-mail; and a facsimile transmission, each response mechanism
5 integrally provided in a display message and actuable by a dedicated response means associated therewith.

35. The method according to claim 34 wherein the at least two point-to-point transmission response mechanisms are displayed in response to subscriber
10 activation of a dedicated response means integrally provided in a display message.

36. A computer program loadable into a personal cellular telecommunications device so that the personal cellular telecommunications device programmed in
15 this way is capable of or adapted to carrying out a method in accordance with any one of claims 27 to 35.

37. A program storage device readable by a personal cellular telecommunications device tangibly embodying a program of instructions
20 executable by the personal cellular telecommunications device for carrying out a method in accordance with any one of claims 27 to 35.

38. A smart card operable with a personal cellular telecommunications device so that the personal cellular telecommunications device is capable of or adapted
25 to carrying out a method in accordance with any one of claims 27 to 35.

39. For use in a cellular telecommunications network including a plurality of individually addressable Base Transceiver Stations (BTSs) providing bidirectional signal coverage over a predefined geographical area, and capable of
30 transmitting mostly different content, at least some interactive display messages

- 18 -

where each interactive display message enables a subscriber to automatically activate a response mechanism integrally provided in a display message and actuable by a dedicated response means, a method for operating a personal cellular telecommunications device having at least one dynamic storage buffer, and a subscriber interface including a split screen display screen including at least two portions, the method comprising the steps of:

- (a) temporarily storing display messages in a dynamic storage buffer ready for display on the second portion of the display screen;
- (b) permanently streaming display messages from the dynamic storage buffer on at least one portion of the display screen; and
- (c) automatically discarding display messages from the dynamic storage buffer in accordance with a display message discard scheme irrespective of their having been displayed on the display screen or not.

40. The method according to claim 39 wherein the display messages are only displayed on one portion of the display screen.

41. The method according to claim 39 wherein the display messages are either displayed on one portion of the display screen or the entire display screen.

42. The method according to any one of claims 39 to 41 wherein a PTP display message ready for display is displayed on the display screen in preference to a PTMP display message ready for display.

43. The method according to any one of claims 39 to 42 wherein a display message enables a subscriber to automatically activate one point-to-point transmission response mechanism from the list of: a voice call; an SMS; a data session; e-mail; and a facsimile transmission, each response mechanism integrally provided in a display message and is actuated by a dedicated response means.

44. The method according to claim 43 wherein at least two point-to-point transmission response mechanisms are displayed in response to subscriber activation of a dedicated response means integrally provided in a display message.

5

45. A computer program loadable into a personal cellular telecommunications device so that the personal cellular telecommunications device programmed in this way is capable of or adapted to carrying out a method in accordance with any one of claims 39 to 44.

10

46. A program storage device readable by a personable cellular telecommunications device tangibly embodying a program of instructions executable by the personal cellular telecommunications device for carrying out a method in accordance with any one of claims 39 to 44.

15

47. A smart card operable with a personal cellular telecommunications device so that the personal cellular telecommunications device is capable of or adapted to carrying out a method in accordance with any one of claims 39 to 44.

20 48. For use in a cellular telecommunications network including a plurality of Base Transceiver Stations (BTSSs) including a plurality of individually addressable Base Transceiver Stations (BTSSs) providing bidirectional signal coverage over a predefined geographical area, a display message for display on the display screen of a personal cellular telecommunications device, the display
25 message comprising at least two integrally formed point-to-point transmission response mechanisms from the list of: a voice call; an SMS; a data session; e-mail; and a facsimile transmission, and each having a dedicated response means associated therewith whereby a subscriber is capable of automatically activating one of the at least two point-to-point transmission response mechanisms.

30

- 20 -

49. The display message according to claim 48 wherein the at least two point-to-point transmission response mechanisms are displayed on the display screen in response to subscriber activation of a dedicated response means integrally provided in the display message.

5

50. The display message according to either claim 48 or 49 wherein the display message is a PTMP display message.

10

51. The display message according to either claim 48 or 49 wherein the display message is a PTP display message.

15

52. For use in a cellular telecommunications network including a plurality of Base Transceiver Stations (BTSs) including a plurality of individually addressable Base Transceiver Stations (BTSs) each providing bidirectional signal coverage over a predefined geographical area, a method for operating a personal cellular telecommunications device including a subscriber interface having a display screen, a method for advertising the purchase price of an item, the method comprising the step of: displaying a staggered sequence of display messages on the display screen advertising the item in progressively smaller geographical areas centered around a predefined location.

20

53. The method according to claim 52 wherein the staggered sequence of display messages advertise progressively lower purchase prices for the item.

25

54. The method according to either claim 52 or 53 wherein the display messages are PTMP display messages.

30

55. The method according to either claim 52 or 53 wherein the display messages are PTP display messages.